

ABSTRACT

The present invention includes an apparatus for separating particulates from a fluid in a suspension, comprising: a housing defining a frusto-conically shaped inner chamber with an inner wall, an inlet and a first outlet communicating with the chamber, and a second outlet; and a spinning assembly with a hollow interior mounted in the chamber, the assembly being shaped to define an annular gap with the chamber inner wall, the hollow interior communicating with the second outlet, and the hollow interior communicating with the annular gap for flow of fluid materials from the gap into the interior and out of the second outlet in response to rotation of the spinning assembly. The separator finds application in the preparation of waste products such as municipal sewage sludge for processes that produce useful materials including gas, oil, specialty chemicals, fertilizer, and carbon solids, in reliable purities and compositions, and with high energy efficiency.